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PHYSIOLOGY.¹

—Dr. H. P. Bowditch, the President, and Prof. H. N. Martin, the Secretary, of the American Physiological Society, are in Europe for the summer. During the absence of Prof. Martin the duties of the Secretary will be performed by Dr. William H. Welch, of Baltimore.

—The opening of the new Marine Biological Laboratory at Wood's Holl, Mass., is an event of more than ordinary importance to physiologists—not so much for what it now is, as for what it promises to be. At present it is devoted chiefly to the study of morphological problems, owing to the pressing demands from morphologists for opportunities for sea-side work, but even now physiologists find themselves heartily welcomed, and in the numerous problems offered by the muscle and nerve physiology of starfishes, jelly fish, sea-urchins and the like; in the question of phosphorescence; in rudimentary sense organs; in reproduction at its simplest; and in a host of still broader questions concerning the physiology of protoplasm, they will find abundant material for prolonged and absorbing study. The famous zoological station at Naples has lately taken steps toward offering opportunities to physiologists equal to those which it has for years supplied to morphologists; and it cannot be doubted that equally brilliant results will follow and will enrich physiology, as morphology has already been enriched. No special facilities have as yet been provided for physiologists at Wood's Holl, but it is the desire and the intention of the trustees to make the laboratory, in fact as well as in name, a *Biological* laboratory.

—The editor of the *Journal of Morphology* had occasion not long since to defend his action in publishing in his periodical an article of a decidedly physiological character, and his remarks, which we quote from a recent prospectus, of the journal, are noteworthy and suggestive for physiologists generally, as well as for the critics for whom they were written:—

“As long as this remains the only journal in our country that offers to publish zoological papers with adequate illustration, it will be both unnecessary and inexpedient to exclude important papers because they do not happen to be strictly morphological. No such rigid test has ever been applied in a journal of this kind, and a little

¹ This department is edited by Prof. W. T. Sedgwick, of the Massachusetts Institute of Technology, Boston, to whom brief notes, communications, books for review, etc., should be sent.

reflection will show that it is clearly impracticable. Many of our best papers must deal with *mixed* problems pertaining no less—often more—to physiology than to morphology. The end of observation is interpretation, and the goal of all morphology lies in physiology, taken in its broadest and deepest sense. Embryology is one of the leading branches of morphology, and yet many of its more important problems are among the highest known to physiology. These problems are at present inseparably connected with morphological work, and hence cannot properly be excluded from a morphological journal. The same holds true in anatomy and histology; for example, in the case of the sense-organs. The physiological explanation of these organs is what we are all striving for, whether we call ourselves morphologists or physiologists.

“So long as morphologists do most of the work, they will command the field, and their discussions and experimental observations will not be out of place by the side of their morphological studies. The time may come when animal physiology can be separated from animal morphology to the same extent that human physiology is now separable from human anatomy, but we are yet a long way from such conditions. For the present we must recognize the fact, that the relations and bearings of a subject often outweigh the logic of conventional distinctions, and sanction what might be construed, as a violation of the letter, though not the spirit, of our terminology.”

The fact is that cellular physiology and what might be called microscopic physiology has been given up of late to a great extent by the strict physiologists, who have turned their attention too exclusively towards the physical, chemical and mechanical sides of the subject. This is particularly manifest in embryology—formerly mainly in the hands of physiologists, now mainly given over to morphologists—and above all in the field of protoplasmic and cellular physiology where the leading names—Flemming, Strasburger, Fol, Bütschli, Carnoy, etc.—are scarcely familiar to the average physiologist. Any one who is acquainted with the brilliant work of the physiologists (Heidenhain, Gaskell, Kühne, etc.) must recognize the extreme value of microscopic physiology and, further, must clearly understand that it means quite as much to physiology as microscopic anatomy does to anatomy. Obviously, to surrender this branch of the science by neglecting or ignoring it is, to say the least, to narrow and restrict the whole subject.

—Some experiments lately made by Mr. C. F. Hodge,¹ under the direction of Dr. H. H. Donaldson, at the Johns Hopkins Uni-

¹ Am. Journ. of Psychology, Balt., May, 1888.

versity, may serve to illustrate the importance and the fruitfulness of the methods of microscopic physiology.

Starting from the well-known facts of gland histology and physiology where it has been now for long known that activity and rest produce corresponding visible changes in their contents, etc., the authors sought to ascertain whether some discoverable change in the active (or worked) nerve cell could not also be distinguished.

Hodge reports as a result, that a marked shrinkage of the nucleus occurs in worked nerve cells over those not worked; a shrinkage amounting sometimes to 33 per cent. In brief:—

“1. The nucleus and cell body both decrease in size as a result of stimulation.

“2. The protoplasm of the cell becomes vacuolated as a result of stimulation.

“3. Differences appear in staining.”

SCIENTIFIC NEWS.

—Professor A. H. Tuttle, of the Ohio State University, has been elected to the chair of Biology and Agriculture in the University of Virginia.

—Professor Herman L. Fairchild, of New York city, has been elected Professor of Natural History in Rochester University.

—Otto Burbach, known through his investigations of the Foraminifera of Lias, died at Gotha, April 22, 1888.

—Dr. Richard Blochmann has been elected ordinary Professor of Zoology in the University of Königsberg.

—Mr. F. H. Herrick, who has been for several years pursuing post-graduate studies at the Johns Hopkins University, has been elected Professor of Biology at Adelbert College, Cleveland, Ohio.

—The work of the U. S. Fish Commission at Wood's Holl this summer is confined almost exclusively to affording facilities for students to investigate the life-histories of marine animals. The laboratory is under the immediate charge of Dr. John A. Ryder, while among those working there may be mentioned professors and students from Harvard, Johns Hopkins, Princeton, and two Ohio colleges.